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April 23, 2010
W-010-450

Mr. Bryan Smith
Senior Water Resources Control Engineer
California Regional Water Quality Control Board
415 Knollcrest Drive, Suite 100
Redding CA 96001

Dear Mr. Smith:

Subject: Final Comments on the Tentative Order for the City of Redding's Clear Creek Wastewater Treatment Plant

Please find attached the City of Redding's final comments concerning the tentative order for the Clear Creek Wastewater Treatment Plant. The tentative order in question is scheduled to be heard at the May 26, 27, or 28, 2010, Central Valley Regional Water Quality Control Board hearing. The City of Redding appreciates the opportunity to provide comments on this issue.

The attached summary of issues reflects the significant questions and concerns that the City of Redding has regarding the preparation of the tentative order, the magnitude of new and revised requirements it would impose, and the sizable impacts these requirements would have on wastewater treatment processes and ratepayers. The City hopes that by providing these comments, the issues of concern specified can be more fully reviewed by your office and either a more explicit basis for the tentative order's provisions may be provided or the tentative order be revised to address these concerns.

Due to the magnitude of these concerns, the City of Redding would also like to request that the consideration of this tentative order be postponed until a later date. This would allow sufficient time for your office to review the City's concerns and would allow the City to correspond with your office in the hopes of arriving at a revised tentative order that more fully accounts for the needs of the treatment process while protecting the waters of the state.

Sincerely,

Dennis McBride
Wastewater Utility Manager

dm/ro
attachments
c: Rick Duvernay, City Attorney
Barry Tippin, Assistant City Manager/Municipal Utilities Director
Troy Mitchell, Wastewater Utility Supervisor-Clear Creek WWTP
Josh Keener, Wastewater Compliance Coordinator

Comments on the Tentative Waste Discharge Requirements for the City of Redding's Clear Creek Wastewater Treatment Plant NPDES Permit (NPDES No. CA0079731)

The City of Redding (City) appreciates the opportunity to comment on the Tentative Waste Discharge Requirements for the City of Redding Clear Creek Wastewater Treatment Plant (CCWTP). This letter is being submitted prior to the Central Valley Regional Water Quality Control Board's public hearing scheduled for May 26, 27, or 28, 2010.

As discussed later in this comment letter, the justification and reasonableness of new and revised requirements contained in the tentative order for effluent limitations, the mixing zone and dilution credits, monitoring and reporting, and special studies is lacking. Also, there are errors in the facility description, the discussion of planned facility changes, and the identification of City staff who would have signatory authority on behalf of the City. Following is a brief discussion of each of these issues and the revisions requested by the City to alleviate the City's significant concerns regarding the proposed language of the tentative order. Also included with these comments are tables detailing the proposed revisions contained in the tentative order, the magnitude of these changes, and the likely impact thereof. **Due to the seriousness of the City's concerns and the potential impacts of the revised permit requirements, the City requests that consideration of the tentative order be postponed until a later hearing date to allow City staff time to discuss the issues raised in this comment letter with agency staff.**

Issues of Concern

1) Facility Description, Treatment Capabilities and Signatory Authority-*The facility is incorrectly characterized as a tertiary treatment facility throughout the tentative order. Planned and ongoing modifications to the facility are also incorrectly characterized. And the listing of individuals with signatory authority for the City is incomplete. The City requests that these items be corrected and the tentative order be reissued for comment with the corrections incorporated.*

Treatment Capabilities

Throughout the tentative order the facility is referred to as producing tertiary treated effluent; this characterization is contradicted in numerous other locations in the tentative order where the facility treatment process is described as secondary or advanced secondary. The facility is an activated sludge secondary treatment facility with filtration, commonly referred to as advanced secondary treatment. The characterization of the facility's discharge as tertiary treated wastewater is concerning because tertiary treatment is beyond the facility's design and treatment capabilities.

The City's concern is that designating the facility as capable of tertiary treatment may subsequently lead to permit requirements that make it necessary to add chemical coagulants. Addition of chemical coagulation is unnecessary and could complicate the achievement of other discharge requirements. The additional cost of adding coagulants would be as much as $100,000 annually.

One important definition of tertiary treatment comes from Title 22 of the California Code of Regulations (CCR), specifically Section 60301.230. That section defines tertiary treated wastewater as "a filtered and subsequently disinfected wastewater" that meets certain criteria. The definition of filtered wastewater is therefore important, and can be found at 22 CCR Section 60301.320, which defines filtered wastewater as an oxidized wastewater that has either been coagulated and passed through natural undisturbed soils or a bed of filter media or which has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane. The CCWTP does not utilize equipment capable of microfiltration, ultrafiltration, nanofiltration or reverse osmosis, and does not utilize coagulants as part of the filtration process. For this reason, the facility does not meet the requirements of filtered wastewater and, therefore, cannot meet the defined requirements of tertiary treated wastewater.

This is an important point in light of the fact that the tentative order notes, for example on Page F-8, that various requirements and effluent limitations are based upon and require a tertiary level of treatment. The City is concerned that the numerous new and revised effluent limitations may be being based upon a level of treatment that is currently unobtainable by the existing facility design or by improvements now underway. Also, the City is concerned with the prospect of being forced to begin using chemical coagulants to meet the definition of tertiary treatment. In light of regulations in California intended to protect the quality of waters in the state, it would be unfortunate if the City were required to add additional chemicals for the sole purpose of meeting a defined level of treatment for which the CCWTP was not designed and which is unnecessary to meet prescribed water quality requirements.

The City requests that the terms tertiary treated wastewater or tertiary treatment be removed and replaced with advanced secondary treatment, where applicable. Also, any proposed effluent limits based on a tertiary level of treatment should be revised to reflect advanced secondary treatment capabilities.

Facility Description

The facility descriptions found on Pages 1, F-4, F-6, and F-10 do not accurately describe the facility in light of the modifications, both planned and underway, that have been discussed with your office. The City is concerned that without an accurate characterization of the planned changes that have been discussed with your office, the facility may ultimately not conform to the descriptions in the tentative order.

The City requests that the facility descriptions be revised to account for the planned increase in filtration capacity, the planned construction of additional solids dewatering facilities, and planned solids digestion improvements, including the potential installation of a new digester. Because planning and design for these changes is still underway, the City also requests that the revised descriptions provide flexibility in regard to the schedule for implementing the changes.

Signatory Authority

The tentative order lists, on Page F-3, Dennis McBride as the sole authorized person to sign and submit reports. This contradicts the signatory allowances found in the tentative order at Standard Provisions, Pages D-6 and D-7, as well as the information previously submitted to your office designating both Troy Mitchell and John Szychulda as duly authorized representatives of the City of Redding Wastewater Utility.

The City requests that Table F-1, found on Page F-3, be amended to clearly list Troy Mitchell, Chief Plant Operator, and John Szychulda, Chief Plant Operator, as duly authorized representatives having the ability to sign and submit reports.

2) ***Mixing Zone and Dilution Credits-****The assumptions employed in extrapolating from the 2005 mixing zone study to establish dilution credits are not substantiated and are not reasonable given the dilution factors that are known to exist at the point of discharge in the Sacramento River. As a result of the arbitrary reduction in the dilution credits, effluent limitations for some constituents are likewise arbitrarily set at a level that is below the historically observed maximum effluent concentrations. The City requests that establishment of the mixing zone and dilution credits be postponed until a later hearing so the City and Regional Board staff can meet and agree on a more reasonable approach.*

The City has significant concerns regarding the mixing zone and dilution credits as defined in the tentative order, and questions the methodology and calculations used to derive them. The mixing zones and dilution credits are very minimal and would put the facility at immediate risk of violating the resultant effluent limitations for disinfection byproducts. More importantly, requirements for receiving water monitoring will not provide representative samples, and the sample results will have no relation to the actual effect of the facility discharge on receiving water quality and impacts to aquatic and human health.

In 2005 the City prepared a mixing zone study and in 2009 installed new diffusers to provide full mixing at a distance farther downstream than the mixing zone monitoring locations specified in the tentative order. It does not seem reasonable or representative of actual acute and chronic receiving water effects to require monitoring within the mixing zone. As the tentative order notes, "a mixing zone is a limited volume of

receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body." This definition clearly describes how a mixing zone potentially contains areas where sampling could identify pollutant concentrations above water quality criteria. Considering that the 2005 mixing zone study identified a mixing zone extending at least 800 feet downstream of the diffuser, it is unfounded and inappropriate to require that samples be taken as close as 14.3 feet downstream of the diffuser. At that distance, the discharged effluent has not undergone full mixing, and sampling results will not be representative of actual impacts on the receiving water where compliance with water quality standards is required. Aerial photographs taken by the City and provided to your office clearly show that dyed effluent travels in somewhat uniform streams for a distance of more than 14 feet downstream, with segments of clear river water in between. The requirement to determine effluent concentrations inside of a mixing zone negates the rationale for providing a mixing zone study because the effluent is not fully mixed with the receiving water, the monitoring results will not represent actual aquatic and human impacts, and will result in unrepresentative and highly fluctuating concentrations that are baseless and potentially harmful if used to establish future permit conditions.. Downstream impacts should be monitored at the downstream edge of the overall mixing zone to determine water quality impacts and compliance with permit requirements, not within the mixing zone.

As noted in the tentative order, the discharge has a receiving water to effluent ratio of 137:1 under the most conservative analysis. For this reason, the statement in the tentative order that "the facility needs no more than a 2:1 dilution credit to meet both acute and chronic life criterion" is totally unreasonable with respect to the goal of protecting aquatic life and human health.

Effluent limits should be set to protect receiving water quality, taking into account site-specific criteria such as available dilution. The calculations for effluent limits in the tentative order seem completely arbitrary, and bear no reasonable relation to the protection of water quality. The tentative order even notes that the mixing zones and dilution credits proposed are based on "linear assumptions" drawn from the mixing zone study. It is illogical to assume that a complex system such as the Sacramento River will act uniformly, and to base effluent limits and mixing zones on such assumptions could be considered arbitrary and capricious.

It is important to note that the State Implementation Plan (SIP) requires a mixing zone to be established that is "as small as practicable" and implies that a mixing zone shall be as small as possible to protect aquatic and human health while producing effluent limits that are reasonably achievable by a discharger. The proposed mixing zone and dilution credits are far more stringent than needed to protect aquatic and human health, and would impose an undue and unsubstantiated burden on the City and its ratepayers while posing a significant risk of immediate effluent violations.

The mixing zone and dilution credits for disinfection byproducts in particular are much more stringent than is required or justifiable. The criteria for disinfection byproducts are based on the protection of human health and attempt to minimize the level of pollutants in drinking water supplies. For example, the tentative order proposes a mixing zone of only 14.3 feet downstream of the diffuser for chlorodibromomethane, and imposes a 75% reduction of the average monthly limit based on this zone and the related 12:1 dilution. When viewed in context, this overly constrained mixing zone is obviously much smaller than needed and results in effluent limits that are impracticable. There are no drinking water intakes for miles down river, and a vast amount of additional dilution is achieved prior to the closest point of intake; this is also noted in the tentative order on Page F-27. Even considering the unlikely worst case scenario of a future drinking water intake at the closest downstream parcel, additional dilution would take place for over 2,800 feet before the edge of the facility boundaries.

As discussed above and noted in the tentative order, historic maximum effluent concentrations have been identified that are higher than the proposed effluent limitations for both disinfection byproducts covered by the order. Considering the extremely high dilution that exists in the receiving water for both aquatic and human health, and the vast distance to drinking water intakes and therefore low risk to human health, the City contends that there is no basis for proposed effluent limitations that, based on historic data identified in the tentative order, would place the City in immediate risk of effluent violations.

Due to the significant questions and concerns that the City has regarding the calculation of mixing zones and dilution credits, including the methodology used and the assumptions forming the foundation of the calculations, the City requests that the tentative order be postponed to a later hearing to allow City staff to discuss the mixing zone basis with agency staff.

Finally, the City requests that, if the item is not postponed, the requirement for monitoring at the various mixing zone points defined in the tentative order as RSW-003, RSW-004, and RSW-005 be removed, as any samples taken at these points will not be representative, will result in sample concentrations that fluctuate wildly due to extremely inconsistent mixing in such close proximity to the diffuser, will have no relation to receiving water effects outside of the mixing zone, and may provide a faulty basis for future effluent limitations during the next permit cycle.

(Since the City submitted draft comments on April 12, 2010, Regional Board staff has proposed revisions to the tentative order that would revise the dilution credits and effluent limits for dichlorobromomethane. While the City appreciates the consideration of this issue, the proposed revisions would still impose effluent limitations for dichlorobromomethane that are infeasible to achieve and that would pose an immediate risk of violation. Moreover, no revisions have been proposed for chlorodibromomethane or zinc, and the City's concerns still stand for those

constituents. Also, the proposed revisions for dichlorobromomethane raise questions as to why revised effluent limits have only been proposed for one of the disinfection byproducts, especially considering the originally proposed effluent limits for both disinfection byproducts posed an equal risk of violation, the level of dilution available for both is the same, and the risk to human health is identical for both pollutants. The City still requests that the tentative order be postponed until a later hearing to allow City staff to discuss the mixing zone basis with agency staff and discuss appropriate and justifiable effluent limits.

3) Effluent pH Limits-*The effluent limits in the draft order for pH are not justified and are inconsistent with the requirements in other draft permits being considered by the Central Valley Board. The City requests that effluent limits for pH that are consistent with other draft orders and EPA guidelines be incorporated*

The City has concerns about the proposed narrowed range for pH of 6.5 to 8.5. The CCWTP consistently produces an effluent with pH in the area of 6.7 standard units, and often produces an effluent with a pH below the proposed minimum of 6.5 standard units. The proposed pH range would therefore place the facility in immediate risk of violation. Also, the proposed pH range does not appear to have a clear basis and contradicts other permits recently adopted and under consideration by the Central Valley Regional Board.

The Fact Sheet states that federal regulations found at 40 CFR Part 133 require the pH of effluent to be no lower than 6.0 and no greater than 9.0 standard units. That section actually states that "The effluent values for pH shall be maintained within the limits of 6.0 to 9.0 unless the publicly owned treatment works demonstrates that: (1) Inorganic chemicals are not added to the waste stream as part of the treatment process; and (2) contributions from industrial sources do not cause the pH or the effluent to be less than 6.0 or greater than 9.0". The CCWTP does not add inorganic chemicals as part of the standard treatment process, and does not receive influent from industries that cause the effluent to fall outside of the 6.0 to 9.0 range. Therefore, the requirements of 40 CFR Part 133 should not apply to the facility regarding pH.

The Fact Sheet also states that the proposed effluent limitation for pH is based on the Basin Plan objective for surface waters that "pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses". While the Basin Plan includes this objective, it pertains to the state of the receiving water and not a facility's effluent discharge. Moreover, the CCWTP has been monitoring pH in the Sacramento River, both upstream and downstream of the discharge point, for quite some time. No effect on the pH of the receiving water has been found, and this indicates that the existing range of 6.0 to 9.0 standard units is sufficient to protect the quality of surface waters and to meet Basin Plan objectives.

Finally, the City notes that it is typical for publicly owned treatment works in the Central Valley Region to have an effluent pH range of 6.0 to 9.0 standards units. Most importantly, the City would like to note that the tentative order for the Sewerage Commission-Oroville Region (SCOR), also being considered at the May 26, 27, or 28 hearing, contains a pH range of 6.0 to 9.0. This begs the question of why another discharger, with a similar facility and a similar receiving water, has a tentative order specifying less stringent pH requirements than those in the tentative CCWTP order.

Based on the issues raised above, the City requests that the tentative order be revised to include a pH range of 6.0 to 9.0 standard units. It is clear from past monitoring data that this pH range will be achievable by the facility while still protecting the beneficial uses of the receiving water.

(Since the City submitted draft comments on April 12, 2010, Regional Board staff has proposed revisions to the tentative order that would revise the allowed pH range to a range of 6.0 to 8.5 standard units. While the City has requested a range of 6.0 to 9.0, the proposed revision of 6.0 to 8.5 is acceptable, and the City is satisfied with this change)

4) Coliform Monitoring and Median Calculations*-the proposed effluent limits are not reasonable for the protection of public health and are inconsistent with other draft orders being considered by the Central Valley Board. The City requests that the tentative order be revised accordingly to reflect a standard of 23 MPN per 100 mL.*

The proposed order revises both the effluent limits for coliform organisms and the method for calculating those limits. The existing daily maximum of 500 MPN/100mL is proposed to be revised to a value of 240 MPN/100 mL, which cannot be exceeded more than once in a 30-day period. Also, the existing coliform monthly median limitation of 23 MPN/100 mL is proposed to be revised to a 7-day median of 23 MPN/100 mL. The City is concerned with the proposed 7-day median criterion because the proposed lower limits for disinfection byproducts, discussed below, will further narrow the operating range of the facility by requiring the use of less chlorine, thereby increasing the risk of a coliform violation.

The Fact Sheet, Page F-37, states that these proposed tentative limits are based on correspondence with the Department of Public Health (DPH), but the correspondence cited in the fact sheet, along with further correspondence received from DPH by your office and dated July 1, 2003, states that the recommendation of DPH may be modified in response to conditions of a specific discharge. In both letters cited in the tentative order, DPH specifically lists discharges with an available dilution of greater than 20:1 as appropriate situations for modification of the recommendations of DPH. The CCWTP has a minimum available dilution of 137:1 in the Sacramento River, and the facility clearly meets the criteria of DPH for modification of its recommendations.

Further, the tentative order for SCOR, also being considered at the May 26, 27 or 28 hearing, contains specific language addressing this issue and justifying the rationale for the 30-day median used in that tentative order. This begs the question of why another discharger, with a similar facility and similar receiving waters allowing even less available dilution, has a tentative order specifying less stringent coliform requirements than those in the tentative CCWTP order.

As the proposed 7-day median would put the facility in immediate risk of violation, and as the basis for the 7-day median does not fully consider the guidance contained in the cited DPH correspondence, the City requests that the tentative order be revised to include a coliform limit based on a 30-day median of 23 MPN/100 mL.

5) ***Lower Limits for Dichlorobromomethane-****The proposed effluent limits are not reasonable for the protection of public health and are inconsistent with other draft orders being considered by the Central Valley Board. The City requests that the tentative order be revised to extend the mixing zone for compliance monitoring for Dichlorobromomethane.*

The City is concerned with the lower limits for dichlorobromomethane contained in the tentative order. These proposed limits would require the reduced use of chlorine for disinfection and thereby increase the risk of coliform violation and adverse effects to public health, and could potentially require the installation of ultra-violet disinfection at a cost of roughly $12 million, a significant cost that would have an immediate impact on ratepayers and may not ultimately solve the problem, depending on the quality of influent reaching the facility.

Effluent limits for dichlorobromomethane are required due to public health concerns, but there are no drinking water uptakes for a vast distance downstream of CCWTP. For this reason, much more dilution of the effluent occurs before the receiving water becomes utilized for drinking water, as noted on Page F-27 of the Fact Sheet. It is also noted on Page F-35 of the Fact Sheet that dichlorobromomethane has not been detected in upstream receiving water samples, and this further reduces the risk to human health because the river does not have any existing problems with this pollutant. Due to the significant risk of violation based on the proposed effluent limits for this constituent, combined with the extensive dilution received before the receiving water is utilized for drinking water, the proposed effluent limits are more stringent than needed to meet public health objectives.

The tentative order, on Page F-35 of the Fact Sheet, notes that historic effluent levels have been higher than the proposed effluent limits. This clearly indicates that the proposed effluent limits are too stringent. **For this reason, the City requests that the mixing zone for dichlorobromomethane be extended. This change would still protect downstream public health, be achievable by the facility without compromising other**

treatment goals, and would eliminate the need for the installation of extremely costly and unnecessary equipment such as ultra-violet disinfection.

6) Lower Limits for Chlorodibromomethane-*The proposed effluent limits are not reasonable for the protection of public health and are inconsistent with other draft orders being considered by the Central Valley Board. The City requests that the tentative order be revised to extend the mixing zone for compliance monitoring for Chlorodibromomethane.*

The City is concerned with the lower limits for chlorodibromomethane contained in the tentative order. These proposed limits would place the facility in immediate risk of violation, would require the reduced use of chlorine for disinfection and thereby increase the risk of coliform violation and adverse effects to public health, and could potentially require the installation of ultra-violet disinfection at a cost of roughly $12 million, a significant cost that would have an immediate impact on ratepayers and may not ultimately solve the problem, depending on the quality of influent reaching the facility.

Effluent limits for chlorodibromomethane are required due to public health concerns, but there are no drinking water uptakes for a vast distance downstream of CCWTP. For this reason, much more dilution of the effluent occurs before the receiving water becomes utilized for drinking water, as noted on Page F-26 of the Fact Sheet. It is also noted on Page F-33 of the Fact Sheet that chlorodibromomethane has not been detected in upstream receiving water samples, and this further reduces the risk to human health because the river does not have any existing problems with this pollutant. Due to the significant risk of violation based on the proposed effluent limits for this constituent, combined with the extensive dilution received before the receiving water is utilized for drinking water, the proposed effluent limits are more stringent than required to meet public-health objectives.

The tentative order, on Page F-34 of the Fact Sheet, notes that historic effluent levels have been higher than the proposed effluent limits. This clearly indicates that the proposed effluent limits are too stringent. **For this reason, the City requests that the mixing zone for chlorodibromomethane be extended. This change would still protect downstream public health, be achievable by the facility, and would significantly reduce the risk of violations and the need for the installation of extremely costly and unnecessary equipment such as ultra-violet disinfection.**

7) Additional and More Frequent Monitoring-*The City requests that the requirements for additional and more frequent monitoring in the draft order be reviewed for appropriateness and clarity and be substantiated or removed.*

The tentative order contains numerous new and revised requirements for monitoring, including influent, effluent, receiving water, toxicity, emergency retention basin, source

water, and priority pollutant monitoring. These monitoring changes are listed in the attached tables. These proposed requirements appear to exceed the monitoring frequency justifiably needed for building data sets in this area, would immediately impose significant additional costs in staff time and laboratory analysis, and would potentially require the hiring and training of additional staff. In addition, the basis for these new monitoring requirements does not seem clear in some cases. Section 13267 (b)1 of the California Water Code states that "The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports". It also states that "In requiring these reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports". The City contends that none of these requirements have clearly been met in the tentative order, the burden of cost does not reasonably bear a relationship to a legitimate need, the increase in type and frequency of monitoring is not explicitly justified, and substantive evidence is not provided that would justify the requirement that the City provide this additional and costly monitoring. These requirements for additional and more frequent monitoring would immediately impose significant additional costs in staff time and laboratory analysis, and would potentially require the hiring and training of additional staff to meet a need that has not been justified.

Influent Monitoring

The tentative order requires that the facility's influent be monitored for the following new constituents and parameters: pH, priority pollutants, total cadmium, total chromium, total copper, total lead, total nickel, total silver, and total zinc. It also includes a doubling of the monitoring frequency for biological oxygen demand and total suspended solids. The City understands the desire of regulatory agencies to build data sets to monitor the quality of influent reaching the facility, but the new and revised requirements appear arbitrary, no substantive basis is included in the tentative order for the new requirements, and the cost for additional influent data is not reasonably related to any clear need and therefore should not be borne by ratepayers.

Section 13267 (b)1 of the California Water Code states that "The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports". It also states that "In requiring these reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports". The need for the additional influent monitoring has not been demonstrated in the tentative order. The City has estimated that the new and revised influent monitoring requirements would require an additional 224 hours of staff

time annually, with a cost of roughly $6,720. This does not include the additional substantial cost for contract laboratory analysis.

The City requests that the proposed influent monitoring requirements be reviewed, and that either a clear basis be identified for the requirements or any baseless requirements be removed. If evidence of a clear need or basis exists, the City requests that this evidence be explicitly added to the tentative order as required by California Water Code Section 13267 (b)1. At a minimum, the City requests that the requirements for influent monitoring for pH, priority pollutants, copper and zinc be removed from the tentative order. These constituents are already monitored in the facility's effluent, and there is no clear benefit to monitoring at both locations. For instance, effluent monitoring for copper and zinc at the facility is sufficient to determine compliance with effluent limitations and the related pertinent receiving water objectives.

Effluent Monitoring

The tentative order requires that the facility's effluent be monitored for the following new constituents: Bis (2-Ethylhexyl) Phthalate, total aluminum, nitrate, nitrite, standard minerals, and sulfate. It also includes a doubling of the effluent monitoring frequency for coliform, a tripling of that for total dissolved solids, a quadrupling of that for priority pollutants, ammonia (both ionized and unionized) and electrical conductivity, and a 700% increase in the effluent monitoring frequency of temperature. The City understands the desire of regulatory agencies to build data sets to monitor the quality of effluent discharged from the facility, but the new and revised requirements appear arbitrary, no substantive basis is included in the tentative order for the new requirements, and the cost for the additional effluent monitoring is not reasonably related to any clear need and therefore should not be borne by ratepayers. Also, none of the constituents that are required to be monitored more frequently posed any significant treatment problem during the last permit cycle with meeting effluent limits; for this reason, it is not reasonable that additional monitoring be required.

As noted above, Section 13267 (b)1 of the California Water Code states that "The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports". It also states that "In requiring these reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports". The need for additional effluent monitoring has not been demonstrated in the draft order. The City has estimated that the new and revised effluent monitoring requirements would require an additional 1,054 hours of staff time annually, with a cost of roughly $31,620. This does not include the additional substantial cost for contract laboratory analysis.

The City requests that the proposed effluent monitoring requirements be reviewed, and that either a clear basis be identified for the requirements or any baseless requirements be removed. If evidence of a clear need or basis exists, the City requests that this evidence be explicitly added to the tentative order as required by California Water Code Section 13267 (b)1. At a minimum, the City requests that the monitoring frequencies for effluent monitoring for ammonia (both total and un-ionized), electrical conductivity, temperature, coliform organisms, and total dissolved solids be revised to retain the monitoring frequencies contained in the existing NPDES permit. These monitoring frequencies have been more than sufficient to determine compliance with effluent limits and receiving water objectives, and there is no clear benefit to the vastly increased monitoring frequencies.

Receiving Water Monitoring

The tentative order requires that the receiving water be monitored for the following new constituents and parameters: flow, ammonia, electrical conductivity, standard minerals, sulfate, and total dissolved solids. It also includes two new receiving water monitoring locations in addition to the existing locations, with dissolved copper, dissolved zinc, and hardness monitoring required at the new locations. It also includes a quadrupling of the monitoring frequencies for temperature, turbidity, pH, and dissolved oxygen. The City understands the desire of regulatory agencies to build data sets to monitor the quality of receiving waters in the vicinity of a discharge, but some of the new and revised requirements appear arbitrary, no substantive basis is included in the tentative order for some of the new requirements, and the cost for some of the additional receiving water monitoring is not reasonably related to any clear need and therefore should not be borne by ratepayers. Also, none of the constituents that are required to be monitored more frequently posed any significant threat to receiving water during the last permit cycle; for this reason, it is not reasonable that additional monitoring be required for those constituents. Finally, the City requests that, due to the cost and difficulty associated with taking a representative measurement of river flow at the facility, the flow values reported be based on the currently monitored flow at Keswick and Whiskeytown Dams.

As noted above, Section 13267 (b)1 of the California Water Code states that "The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports". It also states that "In requiring these reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports". The need for additional receiving water monitoring has not been demonstrated in the draft order. The City has estimated that the new and revised receiving water monitoring requirements would require at least an additional 472 hours of staff time annually, with a cost of roughly

$14,160. This does not include the additional substantial cost for contract laboratory analysis.

Finally, the receiving water monitoring locations for those pollutants given dilution credits are somewhat unclear and should be specifically defined to avoid confusion. For example, on Page E-3, Table E-1 provides a monitoring location description that does not note the exact location of the mixing zone monitoring locations. These locations are defined on Pages F-25 and F-26 based on their distance downstream of the diffuser, but the locations should further be specified in Table E-1 by noting the exact distance downstream where the samples will be taken from the river bank.

The City requests that the proposed receiving water monitoring requirements be reviewed, and that either a clear basis be identified for the requirements or any baseless requirements be removed. If evidence of a clear need or basis exists, the City requests that this evidence be explicitly added to the tentative order as required by California Water Code Section 13267 (b)1. The City understands the need for the new monitoring requirements for ammonia, copper and zinc, but the basis for the other new and revised monitoring requirements is unclear. At a minimum, the City requests that the proposed frequencies for receiving water monitoring for temperature, turbidity, pH, and dissolved oxygen be revised to retain the monitoring frequencies contained in the existing NPDES permit. These monitoring frequencies have been more than sufficient to determine compliance with receiving water objectives, and there is no clear benefit to the vastly increased monitoring frequencies. The City also requests that Table E-1 be modified as discussed above to clearly note the distance downstream from the diffuser where the mixing zone monitoring samples will be taken from the river bank. Finally, the City requests that the tentative order be revised to allow receiving water flow to be reported based on the existing flow monitoring stations at Keswick and Whiskeytown Dams, as these sources represent nearly the entire flow of the river.

Acute and Chronic Toxicity Monitoring

The tentative order includes revised toxicity monitoring requirements for both acute and chronic toxicity. This includes an increased frequency of acute toxicity monitoring and an increased frequency and revised methods for chronic toxicity monitoring. The increased monitoring frequencies do not have a clear basis, and some of the methods for monitoring chronic toxicity are either unclear or are much more stringent than those found in other NPDES permits in the region. Further, the increased monitoring would impose immediate additional costs in staff time for sampling and also in contract laboratory fees.

Acute Toxicity Monitoring

The tentative order includes a revised monitoring frequency for acute toxicity, increasing the analysis frequency from quarterly to monthly. The CCWTP has only had one instance of acute toxicity violation, in December of 2008. This violation was determined to have been likely caused by elevated ammonia levels. As the tentative order requires increased ammonia monitoring and the preparation of various plans to ensure that ammonia removal is maximized, the issue of ammonia toxicity is already addressed without needing increased acute toxicity monitoring as well. The facility also currently has an expansion and modification project underway, and part of this project will be the modification of the aeration basins to allow nitrification to be maximized, which will further increase the efficiency of ammonia removal. Because measures are underway to reduce ammonia levels, as well as the fact that only one acute toxicity analysis resulted in violation, the increased monitoring frequency of ammonia is unfounded and unnecessary. Moreover, the proposed requirement for monthly acute toxicity testing is much more frequent than that required by other NPDES permits in the region. For example, the tentative order for SCOR, also being considered at the May 26, 27 or 28 hearing, requires only quarterly acute toxicity monitoring; this is also typical of other permits in the region. This begs the question of why another discharger, with a similar facility and a similar receiving water allowing even less available dilution, has a tentative order specifying less stringent acute toxicity monitoring requirements than those in the tentative CCWTP order.

The City requests that the monitoring frequency for acute toxicity in the tentative order be revised to retain the existing requirement for quarterly monitoring. If a basis exists for the increased monitoring frequency, the City requests that it be explicitly added to the tentative order. Currently the tentative order, on Page F-54, states that the increased frequency is "Consistent with requirements of other for other POTWs in the Central Valley Region". As discussed above, this is not the case for existing permits in the region or the tentative SCOR permit.

Chronic Toxicity Monitoring

The tentative order contains requirements for increased monitoring of chronic toxicity, which is proposed to be increased from annually to semi-annually. The CCWTP has not had any statistically significant chronic toxicity results during the last permit cycle, and no basis exists for the increase in frequency. The tentative order, on Page F-54, states that the increased frequency is required "to determine compliance with the narrative effluent limitations for chronic toxicity and the Basin Plan's narrative toxicity objective." As no chronic toxicity has been discovered in the facility's effluent, the annual testing for chronic toxicity is sufficient to determine compliance with these limits and objectives, and additional testing is unfounded. Also, the methodology for the chronic toxicity analysis is unclear, and the numeric monitoring triggers are much more stringent than those found in other permits in the region.

In the tentative order, the numeric monitoring trigger is listed as >1 TUc. The typical numeric monitoring trigger in the Central Valley Region is >10 TUc, including the tentative SCOR order also being considered at the May 26, 27 or 28 hearing, and there is no clear basis in the tentative order for this reduced toxicity threshold. The tentative order states that the TUc of >1 is used because the order "does not allow any dilution for the chronic condition" but throughout the tentative order it is stated that a dilution of 2:1 is used for the consideration of chronic conditions.

Also, the language on Page E-8 in regard to the dilution used in chronic toxicity analysis is unclear and unfounded. The tentative language seems to imply that chronic toxicity testing with 100% effluent is required, unless toxicity is found, in which case the full dilution series is required. This does not provide the laboratory or our operators with sufficient information, and negates the ability to utilize a less stringent numeric monitoring trigger than >1 TUc. It is very uncommon in Central Valley Region permits to require only monitoring on 100% effluent with no dilution; this includes the tentative SCOR order also being considered at the May 26, 27 or 28 hearing.

The tentative changes in chronic toxicity monitoring frequency, as well as the numeric monitoring trigger, are unfounded and no basis is given for these revisions in the tentative order. The City requests that the tentative order be revised to require annual chronic toxicity monitoring, and also that the sentence on Page E-8 that reads "If no toxicity is observed at 100% effluent, then the full dilution series is not required" be completely removed. Further, the City requests that the numeric monitoring trigger in the tentative order be revised to >10 TUc, so that the numeric monitoring trigger be consistent with other orders in the Central Valley Region. If a basis for these tentative changes in frequency and numeric monitoring triggers exists, or if further information is needed from the City to clarify the issues, the City requests that the tentative order be revised to clearly list this basis and/or describe the information needed.

Priority Pollutant Monitoring, Biosolids Monitoring and Pretreatment Program Reporting

The tentative order includes requirements for priority pollutant monitoring of influent, effluent and biosolids that are unclear and contradictory, and includes discussions of biosolids monitoring that do not fully represent the biosolids produced at CCWTP. In addition to being unclear, the revised priority pollutant monitoring would impose a significant additional cost, and the rationale for the increased frequency is not clear and no basis is provided in the order. Finally, the tentative order specifies a due date for the pretreatment report that is not consistent with other reporting requirements throughout the order.

The existing NPDES permit requires annual priority pollutant sampling of the facility effluent and the receiving water. In the tables on Pages E-4 and E-5 of the tentative order, priority pollutant monitoring is required quarterly in the third year of the order for influent and the third and fourth years of the order for effluent. In the pretreatment discussion on Page E-18 however, it is stated that "wastewater and sludge sampling and analysis shall be performed at least annually". It is therefore very unclear when priority pollutant sampling is required, and this needs to be more clearly defined in the tentative order. This also complicates an estimate of cost, but the City roughly calculates that this proposed priority pollutant monitoring would impose an immediate additional cost of up to $27,789 annually and an additional cost over the permit cycle of between $88,636 and $138,948.

The requirements for biosolids sampling and the locations of this sampling are also unclear. Table E-1, on Page E-3, lists only one location for biosolids monitoring, but the facility currently produces primary sludge from a plate and frame press as well as secondary sludge that is dried in the facility's drying beds. The table should be revised to clearly describe the two locations, but should note that during the five-year cycle of the permit the facility may begin commingling the primary and secondary sludge, and may also begin receiving sludge from the Stillwater Wastewater Treatment Plant. Also, the existing permit only requires annual sludge sampling, but on Page E-11 of the tentative order it is stated that biosolids shall be sampled quarterly and sampled for priority pollutants, but this does not take into account sludge production at the facility and would at times be impossible. The amount of pressed sludge taken to the local landfill is very small, and annual sampling instead of quarterly would still be sufficient to determine the presence of priority pollutants. Similarly, secondary sludge is only dried for part of the year, and this combined with the homogeneous nature of the material indicates that annual sampling for priority pollutants would be sufficient for secondary sludge as well.

To clarify the contradictory and unclear requirements for priority pollutant monitoring frequency, biosolids sampling locations, and pretreatment reporting dates, the City requests that these sections of the tentative order be reviewed and revised.

As noted above, the tentative order needs to be revised to clearly state the required frequency of priority pollutant monitoring. The City feels that influent monitoring in the third year of the permit and effluent monitoring in the third and fourth year of the permit, as described on Pages E-4 and E-5 of the tentative order, would be sufficient to determine the presence of priority pollutants.

Also, the City requests that Table E-1 on Page E-3 be revised to clearly describe the generation of biosolids at the facility, as discussed above.

The City further requests that the quarterly monitoring frequency for biosolids, as stated on Page E-11, be revised to discuss the monitoring for both types of sludge generated, and that the monitoring requirements match the annual monitoring listed on Page E-18. This request is sufficient to indicate the presence of priority pollutants and would be more feasible considering the timing of sludge generation at the facility.

Finally, the City requests that the quarterly reporting date for the pretreatment program be revised to match the other quarterly reporting dates throughout the tentative order; the pretreatment report should be due on the 1st day of the second month following the end of the calendar quarter.

Special Studies

The tentative order includes a range of special studies that require the City to gather data, prepare reports with varying frequency, and evaluate the performance of the facility and its appurtenant collection system. These special studies are discussed in more detail in the attached table. There is very little substantive basis provided for the imposition of these proposed special studies, and the City is concerned by the cost preparation of the studies will entail, as well as the potential impact of some of the studies. The inflow and infiltration and groundwater monitoring studies specifically raise concerns due to the broad extent of the studies, the lack of a clear basis for them, and the inherent subjectivity of the review of their findings.

Annual Inflow and Infiltration Reduction Progress Report

The City currently allocates significant resources to the identification and repair of inflow and infiltration sources in the sanitary sewer collection system, and spends considerable effort reviewing collection system design and inspecting new construction to ensure appropriate standards are met. While the City understands the importance of inflow and infiltration reduction, there appears to be no statutory basis for the proposed requirement of an annual inflow and infiltration reduction report, and the requirement for such a report is not included in any other orders adopted in the Central Valley Region that the City could find. This lack of a clear basis for the inflow and infiltration report, combined with the lack of such a requirement for most dischargers, equates to an unfair, unsubstantiated, and unduly burdensome requirement that implies the City is being held to a higher standard than other dischargers in the region.

Moreover, the State General Waste Discharge Requirements for Sanitary Sewer Systems (Order #2006-0003-DWQ) already regulates the operation and maintenance of the City's sanitary sewer system, and includes language regarding inflow and infiltration reduction. In consideration of these General Waste Discharge Requirements, the proposed annual inflow and infiltration report is unnecessary and unwarranted.

Finally, the City recognizes that the reduction of inflow and infiltration is a cost-effective way to reduce impacts to the CCWTP, and as noted above expends considerable resources to inspect, clean, and replace segments of the system. These efforts are however operational and fiscal decisions that are appropriately made in the public realm by elected officials. It is inappropriate for the City to be made to justify these decisions regarding ratepayer resources, especially in light of the City's record in minimizing sanitary sewer overflows. The requirement for this annual report is an example of regulatory overreach that could easily lead to public decisions on the use of resources being placed in the hands of unelected regulatory agency staff.

The City requests that the requirement for an annual inflow and infiltration report be removed from the proposed tentative order. If the decision is made to retain this requirement, the legal basis for this requirement should be clearly detailed in the tentative order, the lack of such a requirement for other dischargers in the region should be explained, and the way in which the information contained in the annual report can be used by regulatory staff should be explicitly defined to constrain inappropriate and subjective requirements being imposed on the City's inflow and infiltration reduction efforts.

Groundwater Monitoring Plan

The proposed tentative order also contains a requirement for the preparation and implementation of a groundwater monitoring plan. The CCWTP has utilized the emergency retention basins, facultative sludge lagoons, and drying beds for many years, and the only modifications made to these facilities have been upgrades such as the lining of facultative sludge lagoons that have a positive effect on groundwater protection. It is unclear why, especially in the absence of any expansion or significant modifications of these facilities, there is now a need for groundwater monitoring. It would be justifiable to impose such a requirement on new facilities, but there does not appear to be a clear nexus between the continuing use of these facilities and the regulatory basis for groundwater monitoring. Due to the historic use of these facilities, and the fact that no antidegradation issues exist in this case, and therefore the imposition of groundwater monitoring is therefore unwarranted, unsubstantiated, and would impose an undue burden on ratepayers.

The facility is also located in an area that, due to historic adjacent land uses and nearby groundwater flow patterns, could potentially have existing groundwater impacts unrelated to wastewater treatment. If such offsite originating impacts are identified through groundwater monitoring, there is a significant risk that the City and ratepayers would then be required to undertake remedial action on an issue with no causal relationship to the wastewater treatment process. Especially in light of the fact that the use of the facilities is not new and does not pose any increased threat to groundwater, the risk that ratepayers would be required to fund remedial actions unrelated to City

processes is an undue burden unwarranted by either regulations or actions taken by the City.

The City requests that the requirement for a groundwater monitoring plan either be removed from the tentative order, or revised to include a threshold whereby groundwater monitoring would be triggered in the event that facilities at the CCWTP are expanded or modified in such a way as to pose an increased risk to groundwater. If the decision is made to retain the requirement for groundwater monitoring, the basis for such a requirement should be clearly defined in the tentative order, including a discussion of why this requirement is now being imposed on a facility that has been operated in this way for many years.

Conclusion

The City of Redding looks forward to a fair consideration of the issues addressed in this letter. Due to the magnitude of concerns, including the very questionable basis on which the mixing zones and dilution credits were calculated, the City requests that this issue be postponed to a later hearing date to allow the issues to be discussed with agency staff and either explicitly justified in the tentative order or revised to more reasonably consider the issues addressed herein. It is especially troubling that the tentative order for the Clear Creek Wastewater Treatment Plant appears to be based upon different considerations, calculations, and regulatory interpretations than the tentative order for the Sewerage Commission-Oroville Region also scheduled to be heard at the hearing on May 26, 27, or 28th. A postponement of the consideration of the City's tentative order is appropriate in light of these issues, and the City appreciates the Central Valley Regional Water Quality Control Board's consideration of this request for postponement.

Effluent Limitations								
Parameter	**Unit**	**Current Effluent Limit**		**Proposed Effluent Limit**		**Percent Change**	**Stated Basis**	**Comments**
pH	Standard Units	Min-Max	6 to 9	Min-Max	6.5 to 8.5	N/A	Basin Plan receiving water objective.	The proposed range of 6.5 to 8.5 would pose the risk of immediate violation of effluent limit. Proposed range is based on objectives for **receiving water**, not effluent pH. Historic monitoring data show that the current range of 6 to 9 has not resulted in an affect on the receiving water.
zinc	µg/L	Average Monthly	81	Average Monthly	57	29.6%	Basin Plan, CTR	The proposed effluent limit is a significant reduction from the existing limit, and will increase the risk of violation.
	µg/L	Maximum Daily	120	Maximum Daily	86	28.3%		
Disinfection Byproducts								
Dichlorobromomethane	µg/L	Average Monthly	21	Average Monthly	5.2	75.2%	CTR. These disinfection byproducts are based on human health criteria intended to protect drinking water supplies.	The proposed effluent limits for disinfection byproducts are a reduction of between 64% and 75.2% from the existing limits. The proposed limits are infeasible and will pose an immediate risk of violation of effluent limits, complicate disinfection of wastewater due to lower chlorine usage, and could ultimately require the installation of UV disinfection, a very costly alternative. Moreover, these limits are based on human health criteria to protect drinking water supplies, and no drinking water intake exists for many miles downstream. Therefore the proposed mixing zone and dilution for these disinfection byproducts are smaller than needed to protect human health, and pose an undue burden on the
	µg/L	Maximum Daily	42	Maximum Daily	12.6	70.0%		
Chlorodibromomethane	µg/L	Average Monthly	14	Average Monthly	3.5	75.0%		
	µg/L	Maximum Daily	29	Maximum Daily	10.3	64.5%		
Ammonia Nitrogen	mg/L	Average Monthly	N/A	Average Monthly	Interim- N/A, Final- .7	N/A	US EPA's National Ambiant Water Quality Criteria	Proposed final limits are very low but should be able to be met with planned facility modifications.
	mg/L	Maximum Daily	N/A	Maximum Daily	Interim- 19.9, Final- 2.15	N/A		
Total Coliform Organisms	MPN/100 mL	Monthly Median	23	7-day median	23	N/A	Department of Public Health recommendation	The proposed limits, and the proposed 7-day median requirement, are based on DPH recommendations that specifically state that the recommendations may be modified to meet site-specific criteria. As with the tentative order for SCOR, conditions exist at this facility, including the large amount of dilution available, that warrant modifying DPH recommendations. A 30-day median of 23 MPN should be retained, as the basis for a 30-day median remains, the 7-day median is unneccesary based on DPH recommendations, and would pose an immediate risk of violation.
	MPN/100 mL	Daily Maximum	500	No more than once/month	>240	N/A		

Influent Monitoring						
Parameter	**Sample Type**	**Existing Frequency**	**Proposed Frequency**	**Percent Change**	**Stated Basis**	**Comments**
Existing Sampling With Proposed Changes					California Water Code Section 13267 requires that the burden of monitoring bear a reasonable relationship to the need, and that the Regional Board provide evidence supporting the required monitoring. The proposed increase in monitoring frequency is unfounded, unnecessary for sufficient data collection, and no substantive basis for the increase in included in the tentative order.	These proposed changes in monitoring frequency, type and location will have an immediate impact on staff time at the facility, perhaps requiring the hiring and training of additional staff. Additional costs will also arise from contract analyses by outside laboratories.
Biological Oxygen Demand	24-hr composite	2/ month	1/ week	100% increase		
	Calculate	2/ month	1/ week	100% increase		
Total Suspended Solids	24-hr composite	2/ month	1/ week	100% increase		
	Calculate	2/ month	1/ week	100% increase		
Proposed New Sampling						
pH	Grab	N/A	1/ day	N/A		
Priority Pollutants	24-hr composite	N/A	1/ quarter *	N/A		
Cadmium, Total	24-hr composite	N/A	1/ year	N/A		
Chromium, Total	24-hr composite	N/A	1/ year	N/A		
Copper, Total	24-hr composite	N/A	1/ year	N/A		
Lead, Total	24-hr composite	N/A	1/ year	N/A		
Nickel, Total	24-hr composite	N/A	1/ year	N/A		
Silver, Total	24-hr composite	N/A	1/ year	N/A		
Zinc, Total	24-hr composite	N/A	1/ year	N/A		

* Only in third year of permit

Effluent Monitoring							
Parameter	**Existing Sample Type**	**Proposed Sample Type**	**Existing Frequency**	**Proposed Frequency**	**Percent Change**	**Stated Basis**	**Comments**
Existing Sampling With Proposed Changes						California Water Code Section 13267 requires that the burden of monitoring bear a reasonable relationship to the need, and that the Regional Board provide evidence supporting the required monitoring. The proposed increase in monitoring frequency is unfounded, unnecessary for sufficient data collection, and no substantive basis for the increase in included in the tentative order.	These proposed changes in monitoring frequency, type and location will have an immediate impact on staff time at the facility, perhaps requiring the hiring and training of additional staff. Additional costs will also arise from contract analyses by outside laboratories.
Chlorodibromomethane	Grab	Grab	1/ month	1/ month	N/A		
Copper, Total	Grab	24-hr composite	1/ month	1/ month	N/A		
Dichlorobromomethane	Grab	Grab	1/ month	1/ month	N/A		
Zinc, Total	Grab	24-hr composite	1/ month	1/ month	N/A		
Priority Pollutants	Grab	24-hr composite	1/ year	1/ quarter *	400% increase		
Ammonia Nitrogen, Total	Grab	Grab	1/ month	1/ week	400% increase		
Ammonia, Un-ionized	Grab	Grab	1/ month	1/ week	400% increase		
Electrical Conductivity	Grab	Grab	1/ month	1/ week	400% increase		
Temperature	Grab	Grab	1/ week	1/ day	700% increase		
Total Coliform Organisms	Grab	Grab	1/ week	2/ week	200 % increase		
Total Dissolved Solids	Grab	Grab	1/ quarter	1/ month	300% increase		
Proposed New Sampling							
Bis (2-Ethylhexyl) Phthalate	N/A	Grab	N/A	1/ year	N/A		
Aluminum, Total	N/A	24-hr composite	N/A	1/ month	N/A		
Nitrate Nitrogen, Total	N/A	Grab	N/A	1/ month	N/A		
Nitrite	N/A	Grab	N/A	1/ month	N/A		
Standard Minerals	N/A	Grab	N/A	1/ quarter	N/A		
Sulfate	N/A	Grab	N/A	1/ month	N/A		

* Only in third and fourth year of permit

Special Studies	
Specific Study	**Impacts**
Annual Performance Evaluation	Requires evaluation of treatment efficiency and the removal efficiency for copper, zinc, and disinfection byproducts. This will result in an increase in required staff time each year.
Annual Best Practicable Treatment or Control (BPTC) Review	Requires a one-time evaluation of treatment methods and controls to determine if the facility uses the most appropriate treatment for copper, zinc, disinfection byproducts, and potentially ammonia. Requires an annual report thereafter reviewing treatment and control methods used, and whether any modifications or improvements are needed. This will result in an increase in required staff time each year.
Salinity Evaluation and Minimization Plan	Requires a one-time evaluation of the levels of salinity in the facility's influent, as well as potential measures, both offsite and onsite, to control salinity reaching the Sacramento River. This will result in a small increase in staff time.
Mixing Zone/Dilution Study	Requires a new mixing zone study and related dilution credits to be prepared once facility upgrades allow an increase in wet weather flows over 16 MGD. The facility is currently at 16 MGD, and project modifications are being currently being considered that would provide additional treatment. This study will be required during the five-year cycle of the permit, and will pose a substantial cost for the preparation of the study by an outside firm.
Annual Inflow and Infiltration Reduction Report	Requires an annual report detailing the measures City has taken to reduce inflow and infiltration into the sanitary sewer collection system. This report will quantify the substantial measures already taken each year to reduce I/I. This will require an increase in required staff time annually.
Site-Specific Metals Translator Study Update	Requires new information regarding site-specific metals translators. This will result in a fairly substantial one time cost near the end of the permit cycle for preparation of the study.
Groundwater Monitoring Plan	Requires a plan to be prepared for groundwater monitoring at the facility. This will result in significant costs in staff time and contract consulting. Groundwater monitoring will then be required to be installed, posing substantial costs from drilling monitoring wells, staff time for sampling and reporting. There is also a substantial risk, due to the location of the facility downhill from industrial sites and due to the complex nature of groundwater flows in the area, that the monitoring will find the presence of groundwater impacts unrelated to the facility that may trigger remedial action by the City. It is the City's position that this groundwater monitoring is unfounded and unnecessary, and evidence should be provided as to the need and basis for groundwater monitoring.
Toxicity Reduction Evaluation Workplan	Requires a one-time work plan indicating how the City will proceed if toxicity monitoring thresholds are exceeded. This will result in either a one-time increase in staff time, or a higher cost for contract consulting.